

## CLAIMS

What is claimed is:

1. An apparatus comprising an electrically heated composite umbilical means installed within a subsea flowline containing produced hydrocarbons as an immersion heater means to prevent waxes and hydrates from forming within said flowline and blocking said flowline, whereby said electrically heated composite umbilical means possesses at least one electrical conductor disposed within said composite umbilical means that conducts electrical current that is used to heat said electrically heated composite umbilical means within said subsea flowline.

2. A method of installing an electrically heated composite umbilical means within a previously existing subsea flowline containing produced hydrocarbons to make an immersion heater means to prevent waxes and hydrates from forming within said flowline and blocking said flowline.

3. A method of using an umbilical conveyance means to convey into an existing subsea flowline possessing produced hydrocarbons an electrically heated composite umbilical means used as an immersion heating means to prevent waxes and hydrates from forming within said flowline and blocking said flowline.

4. A method of using an umbilical conveyance means to convey into an existing subsea flowline containing produced hydrocarbons an electrically heated umbilical means used as an immersion heating means to prevent waxes and hydrates from forming within said flowline and blocking said flowline.

**"HIGH POWER UMBILICALS FOR  
ELECTRIC FLOWLINE IMMERSION HEATING..."  
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1        5.    A method of providing artificial lift to produced  
2        hydrocarbons within a subsea flowline comprising at least the  
3        steps of:

4            (a)    attaching a progressing cavity pump to an electric  
5        motor to make an electrically energized pump;

6            (b)    attaching said electrically energized pump to  
7        to a first end of a tubular composite umbilical possessing a  
8        multiplicity of electrical conductors within the wall of said  
9        tubular composite umbilical;

10          (c)    conveying into said flowline said electrically  
11        energized pump attached to said first end of said composite  
12        tubular umbilical;

13          (d)    using first and second of said multiplicity of  
14        electrical conductors to electrically heat said composite  
15        umbilical to prevent waxes and hydrates from blocking the  
16        flow of said produced hydrocarbons within said flowline; and

17          (e)    using at least third and fourth electrical  
18        conductors of said multiplicity of electrical conductors to  
19        provide electrical energy to said electrically energized  
20        pump, whereby said progressing cavity pump provides  
21        artificial lift to said produced hydrocarbons within said  
22        subsea flowline.

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24        6.    A method of providing artificial lift to produced  
25        hydrocarbons within a subsea flowline comprising at least the  
26        steps of:

27            (a)    attaching a hydraulic pump to an electric motor to  
28        make an electrically energized pump;

29            (b)    attaching said electrically energized pump to  
30        to a first end of a tubular composite umbilical possessing a  
31        multiplicity of electrical conductors within the wall of said  
32        tubular composite umbilical;

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1           (c) conveying into said flowline said electrically  
2 energized pump attached to said first end of said composite  
3 tubular umbilical;

4           (d) using first and second of said multiplicity of  
5 electrical conductors to electrically heat said composite  
6 umbilical to prevent waxes and hydrates from blocking the  
7 flow of said produced hydrocarbons within said flowline; and

8           (e) using at least third and fourth electrical  
9 conductors of said multiplicity of electrical conductors to  
10 provide electrical energy to said electrically energized  
11 pump, whereby said electrically energized pump provides  
12 artificial lift to said produced hydrocarbons within said  
13 subsea flowline.